

Remarks

In view of the above amendments and the following remarks, reconsideration of the outstanding office action is respectfully requested.

Withdrawn claims 20 and 22 have been cancelled without prejudice, and claims 54 and 58 have been amended. Claim 54 has been amended to recite a “synthesizing” step, which finds descriptive support at, *inter alia*, Figures 1-3 and the accompanying description at pages 39-42. Claim 58 has been amended to comport with the amendments to claim 54. No new matter is introduced by these amendments.

New claims 60-67 have been introduced. New claim 60 finds descriptive support at Figures 2 and 3, and the accompanying description at pages 40-42. New claims 61-67 are directed to the same subject matter as claims 54-59 (i.e., method of synthesizing a nucleic acid molecule), and claim 61 differs from claim 54 in the recitation of the limitations of the “second primer.” Claim 61 finds descriptive support at, *inter alia*, Figures 1-3 and the accompanying description at pages 39-42, as well as Figure 5-6 and the accompanying description at pages 30-35. No new matter is introduced by these amendments.

Claims 54-67 are pending. Because only two independent claims and less than 20 total claims are presented, no excess claim fees are required.

The rejection of claims 54-59 under 35 U.S.C. § 112 (second paragraph) for indefiniteness is respectfully traversed in view of the above amendment to claim 54. The basis for rejection is overcome by the recitation of step C) in claim 54. Therefore, this rejection should be withdrawn.

The rejection of claims 54, 58, and 59 under 35 U.S.C. § 102(b) as anticipated by WO 95/03426 to Cleuziat et al. (“Cleuziat”), with reference to U.S. Patent No. 5,849,547 to Cleuziat et al., is respectfully traversed.

Cleuziat teaches an amplification reaction using two “inner primers” and two “outer primers,” and displacement of the extension product of the “inner primers” by the extension product of the “outer primers.” However, the “inner primers” described by Cleuziat consist of two segments: one capable of hybridizing with RNA promoter sequence and a second capable of hybridizing with the template sequence. The purpose of these two regions is to introduce an RNA polymerase promoter sequence into the extension product.

The PTO, citing to Example 5 and Figure 15 of Cleuziat, suggests that the primers of SEQ ID NOS: 12 and 13 satisfy the limitations of the first and second oligonucleotide primers, as recited in claim 54. Applicants disagree.

While the inner primers of Cleuziat contain a sequence that is complementary to a portion of its template (i.e., the sample single-stranded nucleic acid molecule or the first single-stranded nucleic acid molecule), these inner primers lack a sequence at the 5' end that is complementary to an arbitrary region of the extension product (and therefore is the same as part of the template sequence). It is the presence of these 5' sequences of the first and second primers, as claimed, that provide for synthesis of "a nucleic acid having complementary sequences linked alternately in a single-stranded chain."

In contrast, the sequence of the Cleuziat primers noted by the PTO is simply complementary to another portion of the primer itself, and would not allow for formation of a 3' stem/loop structure in the extension products. Because the primers of Cleuziat are unable to form an extension product capable of folding into a 3' stem/loop structure, the extension products described by Cleuziat are unable to initiate self-extension. Lacking this ability, the primers of Cleuziat are unable to synthesize "a nucleic acid having complementary sequences linked alternately in a single-stranded chain" as recited in step C).

Because Cleuziat is deficient in this regard, the rejection of claims 54, 58, and 59 as anticipated by Cleuziat is improper and should be withdrawn.

The rejection of claims 55-57 under 35 U.S.C. § 103(a) for obviousness over Cleuziat in view of U.S. Patent No. 5,972,618 to Bloch et al. ("Bloch") is respectfully traversed.

The teaching and deficiencies of Cleuziat are noted above. Bloch is cited solely for the use of melting temperature regulators. The PTO has failed to demonstrate how Bloch overcomes the above-noted deficiencies of Cleuziat with respect to independent claim 54. Because claim 54 is patentable for the reasons noted above, and claims 55-57 depend from claim 54, the obviousness rejection over Cleuziat in view of Bloch is improper and should be withdrawn.

Because claim 54 is allowable for the reasons noted above, applicants submit that new claim 60 dependent thereon is also allowable. Moreover, Cleuziat fails to teach formation

of the recited loop (i.e., in a template) let alone annealing of its primers to such a loop. For these reasons, claim 60 is patentable.

Because Cleuziat is deficient in teaching the synthesis of “a nucleic acid having complementary sequences linked alternately in a single-stranded chain” for the reasons noted above, applicants submit that new claims 61-67, which also recite this limitation, are likewise allowable. Because Cleuziat fails to teach formation of the recited loop (i.e., in a template) let alone annealing of its primers to such a loop, claim 67 is also patentable. For these reasons, claims 61-67 are patentable.

In view of all of the foregoing, applicants submit that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

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/Edwin V. Merkel/
Edwin V. Merkel
Registration No. 40,087

NIXON PEABODY LLP
1100 Clinton Square
Rochester, New York 14604
Telephone: (585) 263-1128
Facsimile: (585) 263-1600